In Collaboration with

Driving Green: Promoting Solar EV Deployment

26 May 2025 | 10:00 – 12:00 hrs Japan Standard Time

Objective

The session discusses key opportunities and challenges faced by developing and emerging economies (from the ISA member countries & Global MoU signatory countries) in scaling the solar charged e-mobility ecosystem, with a focus on unique regional and vehicle segment context and needs.

The session will delve into the current global landscape of solar e-mobility sector with focus on:

- Review of technical, policy and regulatory challenges encountered by the stakeholders in the solar powered EV sector
- Knowledge sharing on technical, policy and regulatory viability aspects of Vehicle Integrated Photovoltaic (VIPV) sector
- Learning economic viability aspects and industry perspective through select case studies and business models in the above two scenarios
- Dive into specific deployment examples of electric commercial vehicles and infrastructure in operation
- ISA's Solar EV Ecosystem Readiness Assessment (SEERA) framework

Background and Rationale

ISA's programme **'Scaling Solar E-Mobility & Storage':** Electric vehicles (EVs) offer an opportunity to rapidly reduce GHG emissions, especially when powered by renewable energy sources. The solar and electric mobility integration enables greater penetration of both clean technologies. Solar energy, with its rapidly falling costs and abundant availability, emerges as a viable and sustainable option for charging EVs. To support large-scale e-vehicle deployment, ISA is actively fostering an enabling ecosystem through its **'Scaling Solar E-Mobility & Storage'** programme. It focuses on two approaches: (a) solar-powered vehicle and battery charging stations, and (b) Vehicle Integrated Photovoltaic technology. These approaches are designed to address the multifaceted challenges and opportunities associated with the large-scale deployment of solar-powered EVs.

Under solar powered charging stations, ISA plans to focus on battery swapping stations, as well as grid connected and stand-alone EV charging stations. VIPV refers to integrating solar panels on the roof or on the body of vehicles.

ISA, in partnership with ADB, initiated a study titled 'Readiness Assessment for Solar-Powered Electric Mobility: Developing an Implementation Framework for ISA's LDCs and SIDS', as part of which a report titled 'Charging for Change: Solar Electric Mobility Global Learnings' was released at COP 29. Through this study, ISA aims to provide a detailed roadmap for transitioning to solar-powered electric mobility in LDCs and SIDS. It aims to assess the readiness levels of 64 LDCs and SIDS (ISA members) in promoting solar-powered electric mobility ecosystem and to identify suitable countries for pilot project implementation. The focus of this study is on two-wheelers, three wheelers, small cars and ferries.

Achieving the targets set by the Global Memorandum of Understanding (MOU) on Zero-Emission Medium- and Heavy-Duty Vehicles (ZE-MHDVs) - namely, 30% zero-emission new vehicle sales by 2030 and 100% by 2040 - is essential for reaching net-zero carbon emissions in the commercial transport sector by 2050. Central to this transition is the rapid deployment of zero-emission commercial vehicles and the supporting infrastructure, including innovative solutions such as solar-powered charging and battery energy storage systems. Solar and other renewable technologies have become cost-competitive with conventional power generation, offering scalable and sustainable pathways to meet the increased energy demands of electrified fleets. Drive to Zero/CALSTART works to accelerate zero-emission commercial vehicle adoption globally with a focus on emerging markets to leapfrog directly to zero-emission medium- and heavy-duty vehicles. Integration of solar-powered e-mobility solutions is a critical strategy for achieving the Global MOU's goals for ZE-MHDVs.

Agenda

Time 120 mins	Speakers
Welcome Address (2 mins)	Mr. Ashish Khanna, Director General, ISA
Inaugural Address (2 mins)	Jiwan Sharma Acharya, Principal Energy Specialist, ADB
Special Address (5 mins)	Representative from Government of Japan/Member Country*
Feature Presentation (5 mins)	Zero Emission Commercial Vehicles: 2025 is the tipping point for global transition Stephenie Kodish, Senior Global Director, Drive to Zero, CALSTART
ISA Programme Updates on Solar E-Mobility and clean transport (10 mins)	Dr. Mridula Bharadwaj Programme Lead – Solar E-Mobility, Storage, and Green Hydrogen (ISA-ADB TA)
Presentation – 'Readiness Assessment of Solar Electric Mobility in LDCs and SIDS' (20 mins)	ISA Project Team (ICF India)
Report Launch (3 mins)	'Readiness Assessment for Solar-Powered Electric Mobility: Developing an Implementation Framework for ISA's Least Developed Countries and Small Island Developing States'
Panel Discussion (60 mins) **Moderator:** Joseph Teja, Consultant, Global Drive to Zero, CALSTART	**Panel:** 1. Manon Rolandone, Sustainable Development Attachée at the Economic Service of the Embassy of France in Japan 2. Sandith Thandasherry, Founder CEO, Navalt 3. Kartikey Hariyani, Founder & CEO of Group BillionE 4. Dr. Keiichi Komoto, Mizuho Research & Technologies
Audience interaction (10 mins)	Moderator
Closing Remarks and way forward (3 mins)	ISA

**To be confirmed*